

A B S T R A C T

A heat processing device that bakes a substrate having a resist coating film containing a volatile substance, includes a hot plate 2, a hot plate temperature control unit 3, a box member 1a, 5, 32 that defines a heat space 30 and a fluid space 31, air supply unit 18, 18A and suction unit 10, 10A that create an air current flowing in a horizontal direction in the fluid space 31, and a controller 22, 22A that controls the hot plate temperature control unit 3, the air supply unit 18, 18A, suction unit 10, 10A and the gas temperature control unit 19 so that a relationship of $TF < TH \leq TS \leq TP$ is satisfied where TP represents a temperature of the hot plate, TS represents an upper surface temperature of the substrate W, TH represents a temperature of the heat space and TF represents a temperature of the fluid space.